

**Listing of Claims:**

Claims 1 and 2 (Canceled).

3. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim [[2]] 4, wherein the radio-communication marker generating unit, as the predetermined number of radio-communication markers, between the mobile communication terminal and respective positions of the plurality of cells on the ordinate in the second coordinate, causes to display ~~capable of recognizing~~ an indication of at least one of down radio-communication from the mobile communication terminal to one of the cells and up radio-communication from one of the cells to the mobile communication terminal, and ~~capable of recognizing~~ an indication of the points in radio-communication time which correspond to the radio-communication time information along the abscissa which is a time base of the second coordinate.

4. (Currently Amended) ~~The A~~ test system for a mobile communication terminal ~~, according to claim 2,~~ comprising:  
a test procedure control unit which executes a procedure for carrying out a transition test for a connection state of a mobile communication terminal of a cellular system, and which outputs

control information including time setting information in accordance with the procedure;

a transmission/reception unit which, in accordance with the control information from the test procedure control unit,

10 generates a plurality of test signals including predetermined messages corresponding to a plurality of cells in the cellular system, and which varies the plurality of test signals in accordance with a scheduled time passage to thereby transmit the signals to the mobile communication terminal and receive response  
15 signals including predetermined messages from the mobile communication terminal;

a reception measurement unit which measures time domain waveforms of the response signals including the predetermined messages from the mobile communication terminal;

20 a message log acquiring unit which acquires and stores messages and radio-communication time information when the transmission/reception unit and the mobile communication terminal exchange the respective predetermined messages;

25 a display unit which displays measured results of the time domain waveforms from the reception measurement unit and the radio-communication time information from the message log acquiring unit; and

a display control unit which carries out processing for receiving the measured results of the time domain waveforms from

30 the reception measurement unit and the radio-communication time  
information from the message log acquiring unit, and for causing  
to display graphs indicating the measured results of the time  
domain waveforms and a predetermined number of radio-communication  
markers indicating points in radio-communication time which  
35 correspond to the radio-communication time information by a  
graphic display capable of simultaneously comparing at both sides  
of the same time base on the display unit;

wherein the display control unit includes:

a coordinate generating unit which divides a display  
40 screen of the display unit into at least a first region and a  
second region, and which causes to display a first coordinate  
where the abscissa is time and the ordinate is power level at the  
first region, and causes to display a second coordinate where the  
abscissa is a time base which is the same as the abscissa of the  
45 first coordinate and the ordinate is positions of the mobile  
communication terminal and the plurality of cells at the second  
region;

a data display control unit which causes to display the  
graphs indicating the measured results of the time domain  
50 waveforms at the first coordinate displayed by means of the  
coordinate generating unit; and

a radio-communication marker generating unit which  
causes to display a predetermined number of radio-communication

markers indicating points in radio-communication time which  
55 correspond to the radio-communication time information along the  
abscissa which is a time base of the second coordinate displayed  
by means of the coordinate generating unit;

wherein the reception measurement unit has a function of  
measuring a transition time that, in accordance with a response  
60 signal from the mobile communication terminal, until it is  
switched from a state in which the mobile communication terminal  
receives a first test signal showing a greater strength at a  
current point in time among the plurality of test signals to a  
state in which the mobile communication terminal receives a  
65 second test signal having a second greater strength among the  
plurality of test signals accompanying that the plurality of test  
signals are varied to be successively made to be a greater  
strength in accordance with the scheduled time passage,

wherein the test system ~~for a mobile communication terminal~~  
70 further comprises a determining unit which, upon receiving the  
measured results of the transition time from the reception  
measurement unit, carries out success/failure determination as to  
whether a transition has been a success or a failure in which the  
mobile communication terminal switches from a state of receiving  
75 the first test signal to a state of receiving the second test  
signal among the plurality of test signals corresponding to the

plurality of cells in accordance with the control information from the test procedure control unit, and

80     ~~wherein~~ the data display control unit causes to display ~~capable of recognizing~~ an indication of a success/failure as a result of the success/failure determination by the determining unit together with a corresponding radio-communication marker among the predetermined number of radio-communication markers displayed by means of the radio-communication marker generating  
85     unit.

5     5. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim [[2]] 4, wherein the data display control unit causes to display ~~capable of recognizing~~ an indication of states from a start up to a time of responding at a point in time when a scheduled response is completed, accompanying a display of the corresponding radio-communication marker among the predetermined number of radio-communication markers displayed by means of the radio-communication marker generating unit, at least one of the  
10     first and second coordinates along the abscissa which is a time base of the first and second coordinates displayed by means of the coordinate generating unit.

6. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim [[2]] 4, wherein the message log acquiring unit comprises a storage unit which acquires and analyzes message information when the  
5 transmission/reception unit and the mobile communication terminal exchange the respective predetermined messages, thereby storing at least a part of or a text of the message information so as to be read, and

wherein the display control unit ~~has~~ includes:

10 a designation marker generating unit which generates a designation marker that moves in accordance with a selective designation of an operator along the abscissa which is a time base of the second coordinate displayed by means of the coordinate generating unit, and causes to display at least one of  
15 the predetermined number of radio-communication markers displayed by means of the radio-communication marker generating unit; and

20 a message display control unit which, when a specific radio-communication marker among the predetermined number of radio-communication markers is designated by the designation marker displayed by means of the designation marker generating unit, reads out at least a part of or a text of message information corresponding to the specific radio-communication marker from the storage unit of the message acquiring unit and causes to display it on the display unit.

7. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim [[1]] 4, wherein the reception measurement unit includes a spectrum analyzer having a function of analyzing and measuring a response signal from the mobile communication terminal at a time domain.

8. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim [[2]] 4, wherein the test procedure control unit has comprises a computer and a computer readable medium having stored thereon computer readable program code means for causing the computer to carry out a transition test for a connection state of the mobile communication terminal of the cellular system, and outputs to output control information including time setting information in accordance with the computer readable program code means.

9. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim 8, wherein the determining unit, the message log acquiring unit, and the display control unit are organized together with the test procedure control unit as software operating units of the computer.

10. (Currently Amended) The test system ~~for a mobile communication terminal~~, according to claim 9, wherein the computer readable ~~program code means~~ medium has stored thereon:

5 first computer readable program code means for causing the transmission/reception unit to generate a plurality of test signals including predetermined messages corresponding to a plurality of cells in the cellular system in accordance with the control information from the test procedure control unit, and to vary the plurality of test signals in accordance with a scheduled  
10 time passage to thereby transmit the signals to the mobile communication terminal and receive response signals including the predetermined messages from the mobile communication terminal;

15 second computer readable program code means for causing the reception measurement unit to measure time domain waveforms of the response signals including the predetermined messages from the mobile communication terminal;

20 third computer readable program code means for causing the message log acquiring unit to acquire and store messages and the radio-communication time information when the transmission/reception unit and the mobile communication terminal exchange the respective predetermined messages;

fourth computer readable program code means for causing the display unit to display measured results of the time domain waveforms from the reception measurement unit and the



25 radio-communication time information from the message log  
acquiring unit; and

fifth computer readable program code means for causing the  
display control unit to carry out processing for receiving the  
measured results of the time domain waveforms from the reception  
30 measurement unit and the radio-communication time information  
from the message log acquiring unit, and to display graphs  
indicating the measured results of the time domain waveforms and  
a predetermined number of radio-communication markers indicating  
points in radio-communication time which correspond to the  
35 radio-communication time information by a graphic display capable  
of simultaneously comparing at both sides on the same time base  
on the display unit.

11. (Currently Amended) The test system ~~for a mobile  
communication terminal~~, according to claim 10, wherein the  
computer readable ~~program code means~~ medium further has stored  
thereon:

5 sixth computer readable program code means for causing the  
coordinate generating unit to divide a display screen of the  
display unit into at least a first region and a second region,  
and to display a first coordinate where the abscissa is time and  
the ordinate is power level on the first region, and a second  
10 coordinate where the abscissa is a time base which is the same as

the abscissa of the first coordinate and the ordinate is  
respective positions of the mobile communication terminal and the  
plurality of cells on the second region;

seventh computer readable program code means for causing the  
15 data display control unit to display the graphs indicating the  
measured results of the time domain waveforms at the first  
coordinate displayed by means of the coordinate generating unit;  
and

eighth computer readable program code means for causing the  
20 radio-communication marker generating unit to display the  
predetermined number of radio-communication markers indicating  
points in radio-communication time which correspond to the  
radio-communication time information along the abscissa which is  
a time base of the second coordinate displayed by means of the  
25 coordinate generating unit.

12. (Currently Amended) The test system ~~for a mobile  
communication terminal~~, according to claim 11, wherein the  
computer readable ~~program code means~~ medium further has stored  
thereon:

5 ninth computer readable program code means for causing the  
radio-communication marker generating unit to display, as the  
predetermined number of radio-communication markers, between the  
respective positions of the mobile communication terminal and the

plurality of cells at the second coordinate, ~~capable of~~  
10 ~~recognizing an indication of~~ at least one of down radio-  
communication from the mobile communication terminal to one of  
the cells and up radio-communication from one of the cells to the  
mobile communication terminal, and ~~capable of recognizing an~~  
indication of the points in radio-communication time which  
15 correspond to the radio-communication time information along the  
abscissa which is a time base of the second coordinate.

13. (Currently Amended) The test system ~~for a mobile~~  
~~communication terminal~~, according to claim 12, wherein the  
computer readable ~~program code means~~ medium further has stored  
thereon:

5       tenth computer readable program code means for causing the  
reception measurement unit to, in accordance with a response  
signal from the mobile communication terminal, measure a  
transition time that until it is switched from a state in which  
the mobile communication terminal receives a first test signal  
10 showing a greater strength at a current point in time among the  
plurality of test signals to a state in which the mobile  
communication terminal receives a second test signal having a  
second greater strength among the plurality of test signals  
accompanying that the plurality of test signals are varied to be

15        successively made to be a greater strength in accordance with the  
scheduled time passage;

         eleventh computer readable program code means for causing a  
determining unit to, upon receiving the measured results of the  
transition time from the reception measurement unit, carry out  
20        success/failure determination as to whether a transition has been  
a success or a failure in which the mobile communication terminal  
is switched from a state of receiving the first test signal among  
the plurality of test signals corresponding to the plurality of  
cells to a state of receiving the second test signal in  
25        accordance with the control information from the test procedure  
control unit; and

         twelfth computer readable program code means for causing the  
data display control unit to display ~~capable of recognizing an~~  
indication of a success/failure as a result of the  
30        success/failure determination by the determining unit together  
with a corresponding radio-communication marker among the  
predetermined number of radio-communication markers displayed by  
means of the radio-communication marker generating unit.

14. (Currently Amended) The test system ~~for a mobile~~  
~~communication terminal~~, according to claim 13, wherein the  
computer readable ~~program code means~~ medium further has stored  
thereon:

5           thirteenth computer readable program code means for causing  
the data display control unit to display ~~capable of recognizing~~  
an indication of states from a start up to a time of responding  
at a point in time when a scheduled response is completed,  
accompanying the display of a corresponding radio-communication  
10       marker among the predetermined number of radio-communication  
markers displayed by means of the radio-communication marker  
generating unit, at least one of the first and second coordinates  
along the abscissa which is a time base of the first and second  
coordinates displayed by means of the coordinate generating unit.

15. (Currently Amended) The test system ~~for a mobile~~  
~~communication terminal~~, according to claim 14, wherein the  
computer readable ~~program code means~~ medium further has stored  
thereon:

5           fourteenth computer readable program code means for causing  
the storage unit of the message log acquiring unit to acquire and  
analyze message information when the transmission/reception unit  
and the mobile communication terminal exchange the respective  
predetermined messages, thereby storing at least a part of or a  
10       text of the message information to be read.

16. (Currently Amended) The test system ~~for a mobile~~  
~~communication terminal~~, according to claim 15, wherein the

computer readable ~~program code means~~ medium further has stored thereon:

5           fifteenth computer readable program code means for causing the designation marker generating unit of the display control unit to move in accordance with a selective designation by an operator along the abscissa which is a time base of the second coordinate displayed by means of the coordinate generating unit, 10           and generate a designation marker identifying at least one of the predetermined number of radio-communication markers displayed by means of the radio-communication marker generating unit to be designated; and

          sixteenth computer readable program code means for causing 15           the message display control unit of the display control unit to, when a specific radio-communication marker among the predetermined number of radio-communication markers is designated by the designation marker displayed by means of the designation marker generating unit, read out at least a part of or a text of 20           the message information corresponding to the specific radio-communication marker from the message acquiring unit, and to display it on the display unit.

Claims 17-22 (Canceled).

23. (Currently Amended) ~~The~~ A test method for a mobile communication terminal ~~, according to claim 22,~~ comprising:

operating a test procedure control unit to execute a procedure for carrying out a transition test for a connection state of a mobile communication terminal of a cellular system, and outputting control information including time setting information in accordance with the procedure from the test procedure control unit;

operating a transmission/reception unit, in accordance with the control information from the test procedure control unit, to generate a plurality of test signals including predetermined messages corresponding to a plurality of cells in the cellular system, and vary the plurality of test signals in accordance with a scheduled time passage to thereby transmit the signals to the mobile communication terminal and receive a response signal including a predetermined message from the mobile communication terminal in the transmission/reception unit;

operating a reception measurement unit to measure a time domain waveform of the response signal including the predetermined message from the mobile communication terminal in the reception measurement unit;

operating a message log acquiring unit to acquire and store messages and radio-communication time information when the transmission/reception unit and the mobile communication terminal

25     exchange respective messages by means of the message log  
      acquiring unit;  
      operating a display unit to display measured results of the  
      time domain waveforms from the reception measurement unit, and  
      the radio-communication time information from the message log  
30     acquiring unit; and  
      operating a display control unit to carry out processing for  
      receiving the measured results of the time domain waveforms from  
      the reception measurement unit and the radio-communication time  
      information from the message log acquiring unit, and for causing  
35     to display graphs indicating the measured results of the time  
      domain waveforms and a predetermined number of radio-communication  
      markers indicating points in radio-communication time which  
      correspond to the radio-communication time information by a  
      graphic display capable of simultaneously comparing at both sides  
40     of the same time base on the display unit by means of the display  
      control unit;  
      wherein the test procedure control unit comprises a computer  
      and a computer readable medium having stored thereon a computer  
      readable program code means for causing the computer to carry out  
45     a transition test for a connection state of the mobile  
      communication terminal of the cellular system, and to output  
      control information including time setting information in  
      accordance with the computer readable program code means;



wherein the message log acquiring unit and the display  
50 control unit are organized together with the test procedure  
control unit as operating units of the computer; and  
wherein the computer readable medium has stored  
thereon;

first computer readable program code means for causing the  
55 transmission/reception unit to, in accordance with the control  
information from the test procedure control unit, generate a  
plurality of test signals including predetermined messages  
corresponding to the plurality of cells in the cellular system,  
and vary the plurality of test signals in accordance with a  
60 scheduled time passage to thereby transmit the signals to the  
mobile communication terminal and receive response signals  
including the predetermined messages from the mobile  
communication terminal;

second computer readable program code means for causing the  
65 reception measurement unit to measure time domain waveforms of  
the response signals including the predetermined messages from  
the mobile communication terminal;

third computer readable program code means for causing the  
message log acquiring unit to acquire and store messages and  
70 radio-communication time information when the transmission/  
reception unit and the mobile communication terminal exchange the  
respective predetermined messages;

fourth computer readable program code means for causing the display unit to display measured results of the time domain waveforms from the reception measurement unit and the radio-communication time information from the message log acquiring unit;

fifth computer readable program code means for causing the display control unit to carry out processing for receiving the measured results of the time domain waveforms from the reception measurement unit and the radio-communication time information from the message log acquiring unit, and for causing to display graphs indicating the measured results of the time domain waveforms and a predetermined number of radio-communication markers indicating points in radio-communication time which correspond to the radio-communication time information by a graphic display capable of simultaneously comparing at both sides on the same time base on the display unit;

sixth computer readable program code means for causing a coordinate generating unit of the display control unit to divide a display screen of the display unit into at least a first region and a second region, and to display a first coordinate where the abscissa is time and the ordinate is power level on the first region, and a second coordinate where the abscissa is a time base which is the same as the abscissa of the first coordinate and the

ordinate is respective positions of the mobile communication terminal and the plurality of cells on the second region;

seventh computer readable program code means for causing a data display control unit of the display control unit to display graphs indicating the measured results of the time domain waveforms at the first coordinate displayed by means of the coordinate generating unit;

eighth computer readable program code means for causing a radio-communication marker generating unit of the display control unit to display a predetermined number of radio-communication markers indicating points in radio-communication time which correspond to the radio-communication time information along the abscissa which is a time base of the second coordinate displayed by means of the coordinate generating unit;

ninth computer readable program code means for causing the radio-communication marker generating unit of the display control unit to display an indication of, as the predetermined number of radio-communication markers, between the respective positions of the mobile communication terminal and the plurality of cells on the ordinate at the second coordinate, at least one of down radio-communication from the mobile communication terminal to one of the cells and up radio-communication from one of the cells to the mobile communication terminal, and an indication of the points in radio-communication time which correspond to the

120 radio-communication time information along the abscissa which is  
a time base of the second coordinate;

\_\_\_\_\_tenth computer readable program code means for causing the reception measurement unit to, in accordance with the response signals from the mobile communication terminal, measure a  
125 transition time that until it is switched from a state in which the mobile communication terminal receives a first test signal showing a greater strength at a current point in time among the plurality of test signals to a state in which the mobile communication terminal receives a second test signal having a  
130 second greater strength among the plurality of test signals accompanying that the plurality of test signals are varied to be successively made to be a greater strength in accordance with the scheduled time passage;

eleventh computer readable program code means for causing  
135 the determining unit to, upon receiving the measured results of the transition time from the reception measurement unit, carry out success/failure determination as to whether a transition has been a success or a failure in which the mobile communication terminal is switched from a state of receiving the first test  
140 signal among the plurality of test signals corresponding to the plurality of cells to a state of receiving the second test signal in accordance with the control information from the test procedure control unit; and

twelfth computer readable program code means for causing the  
145 data display control unit of the display control unit to display  
~~capable of recognizing~~ an indication of a success/failure as the  
result of the success/failure determination by the determining  
unit together with a corresponding radio-communication marker  
among the predetermined number of radio-communication markers  
150 displayed by means of the radio-communication marker generating  
unit.

24. (Currently Amended) The test method ~~for a mobile  
communication terminal~~, according to claim 23, wherein the  
computer readable ~~program code means~~ medium further has stored  
thereon:

5 thirteenth computer readable program code means for causing  
the data display control unit to display ~~capable of recognizing~~  
an indication of states from a start up to a time of responding  
at a point in time when a scheduled response is completed,  
accompanying the display of a corresponding radio-communication  
10 marker among the predetermined number of radio-communication  
markers displayed by means of the radio-communication marker  
generating unit, at least one of the first and second coordinates  
along the abscissa which is a time base of the first and second  
coordinates displayed by means of the coordinate generating unit.

25. (Currently Amended) The test method ~~for a mobile communication terminal~~, according to claim 24, wherein the computer readable ~~program code means~~ medium further has stored thereon:

5           fourteenth computer readable program code means for causing the storage unit of the message log acquiring unit to acquire and analyze message information when the transmission/reception unit and the mobile communication terminal exchange the respective predetermined messages, thereby storing at least a part of or a  
10       text of the message information to be read.

26. (Currently Amended) The test method ~~for a mobile communication terminal~~, according to claim 25, wherein the computer readable ~~program code means~~ medium further has stored thereon:

5           fifteenth computer readable program code means for causing the designation marker generating unit of the display control unit to move in accordance with a selective designation by an operator along the abscissa which is a time base of the second coordinate displayed by means of the coordinate generating unit,  
10       and to generate a designation marker identifying at least one of the predetermined number of radio-communication markers displayed by means of the radio-communication marker generating unit to be designated; and

sixteenth computer readable program code means for causing  
15 the message display control unit of the display control unit to,  
when a specific radio-communication marker among the  
predetermined number of radio-communication markers is designated  
by the designation marker displayed by the designation marker  
generating unit, read out at least a part of or a text of the  
20 message information corresponding to the specific  
radio-communication marker from the message acquiring unit, and  
to display it on the display unit.